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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/029,253	12/28/2001	Sung Kwon Hong	K-0381	5027

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EXAMINER
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TRIMMINGS, JOHN P

ART UNIT	PAPER NUMBER
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2133

DATE MAILED: 02/24/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/029,253	<b>Applicant(s)</b> HONG, SUNG KWON	
	<b>Examiner</b> John P Trimmings	<b>Art Unit</b> 2133	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 04 October 2004.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 04 October 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### **DETAILED ACTION**

This office action is in response to the applicant's amendment dated 10/04/2004.

Claims 1, 2, 5, 6, 9, 11, 12, 15 and 16 were amended by the applicant.

Claims 1-16 are pending in this action.

### ***Response to Amendment***

1. In view of the applicant's changes to the drawings, the examiner withdraws the objections to said drawings, and approves the changes.
2. In view of the applicant's changes to the specification, the examiner withdraws the objections to the specification, and approves the changes.
3. Applicant's arguments, see amendment, filed 10/04/2004, with respect to rejections under 35 USC 112 first and second paragraphs have been fully considered and are persuasive. The rejections under 35 USC 112 first and second paragraphs of Claims 1-4, 6, 8-12 and 14-16, has been withdrawn.
4. Applicant's arguments, see amendment, filed 10/04/2004, with respect to the rejections of claims 1, 5 and 11 under 35 USC 102(e) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn to these claims as well as the dependent claims 2-4, 6-10 and 12-16. However, upon further consideration, a new ground of rejection is made in view of the amendment to said claims 1, 5 and 11.

***Claim Rejections - 35 USC § 103***

5. Claims 1, 5 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kim et al., U.S. Patent No. 6751772, and further in view of Gupta et al., U.S. Patent Application No. 2003/0007456. Kim et al. teaches a method of setting an initial error value of a rate-matching algorithm in a data communication system (column 1 lines 15-21), the method comprising: determining an original initial error value (column 23 line 39, preset as  $k/n$ ), which is originally given for a rate-matching algorithm generating a rate-matching pattern (column 6 lines 20-63) for the system; calculating an incremental error value for a puncturing and repeating mode (column 6 lines 20-63), but fails to teach the system to be a hybrid ARQ system, and that the error value depends on the number of retransmissions made. But in an analogous art, Gupta et al. teaches calculating a new initial error value of a data rate by increasing or decreasing incrementally the data rate value over the initial value in proportion to the number of retransmissions of data (paragraph [0045] to [0052]). The examiner, as one with ordinary skill, recognizes that retransmissions occur in a hybrid ARQ system. And Gupta et al., in paragraph [0005], states the advantage of dynamically adjusting the capacity of a radio channel to its most appropriate value, thus conserving resources. One with ordinary skill in the art at the time of the invention, motivated as suggested, would have found it obvious to adjust the initial error value being used by Kim et al., to determine a new puncturing or repeating pattern of a data frame as applied to an ARQ count as suggested by Gupta et al., in order to conserve resources.

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6. Claims 2-4, 6, 7, 12 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kim et al., U.S. Patent No. 6751772, and further in view of Gupta et al., U.S. Patent Application No. 2003/0007456 as applied to Claims 1, 5 and 11, and further in view of Kelkar et al., U.S. Patent No. 6345375.

As per Claims 2, 6 and 12:

Not being taught by Kim et al. and Gupta et al., Kelkar et al., further teaches the method of claim 1, 5 or 11, wherein said modular operator K is obtained by  $K = \text{integer}(A)$ , and integer (A) is defined by  $\text{integer}(A) = N(A)$  or  $\underline{N(A)+1}$ , where  $N(A)$  represents the maximum of a set of integer numbers being less than A (column 2 lines 43-67 and column 3 lines 1-18, and column 10 lines 12-13 when  $A=0$ ).

As per Claim 3, 7 and 13:

Not being taught by Kim et al. and Gupta et al., Kelkar et al., further teaches the method of claim 2, 6 or 12, wherein said incremental value is obtained by, incremental error value  $= (i \bmod K) \cdot e_{\text{minus}}$ , or I (column 10 lines 8-16 when  $A=0$ ).

As per Claim 4:

Not being taught by Kim et al. and Gupta et al., Kelkar et al., further teaches the method of claim 1, wherein said new initial error value is used for a downward link (column 10 lines 26-28) or an upward link (column 10 lines 29-31).

7. Claims 8-10 and 14-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kim et al., U.S. Patent No. 6751772, Gupta et al., U.S. Patent Application No. 2003/0007456, Kelkar et al., U.S. Patent No. 6345375, and further in view of Mihara, U.S. Patent No. 6226326.

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As per Claims 8 and 14:

Kelkar fails to further teach the method of claims 7 and 13, wherein said new initial error value is obtained by an incremental change to an initial value. In an analogous art, Mihara does teach this in FIG.7 and the Abstract. One with ordinary skill in the art would combine the incremental treatment of the error rate by Mihara to the periodic rate adjustment of Kelkar et al. in order to achieve a real-time rate control. Mihara et al., in column 2 lines 36-63 recites the advantage of such a real-time control. One with ordinary skill in the art at the time of the invention, motivated as such by Mihara would combine the references as outlined.

As per Claims 9 and 15:

Kelkar fails to further teach the method of claim 6 and 12, wherein said first incremental value is obtained by a first list of numbers obtained by excluding any number being greater than or equal to  $K$ , where a number set represents a second list of numbers obtained by bit-reversing  $j$  with  $n$ , and  $n$  represents any integer number that satisfies  $K$  where  $K$  may be 0 (the equation in FIG.7 S11). And in view of the motivation above, the claims are rejected.

As per Claims 10 and 16:

Kelkar fails to further teach the method of claim 9 and 15, wherein said new initial error value is obtained by an incremental change to an initial value. In an analogous art, Mihara does teach this in FIG.7 and the Abstract. And in view of the motivation above, the claims are rejected.

***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to John P Trimmings whose telephone number is (703) 272-3830. The examiner can normally be reached on Monday through Thursday, 7:30 AM to 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Albert DeCady can be reached on (703) 272-3819. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

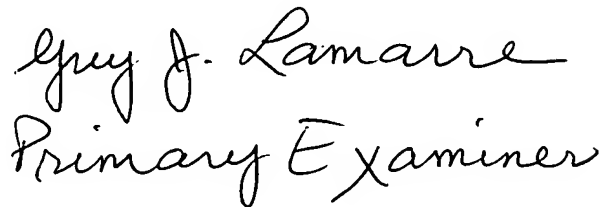
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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



John P Trimmings  
Examiner  
Art Unit 2133

jpt



Primary Examiner